UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

SE-5J

AUG 29 1996

VIA FACSIMILE AND U.S. MAIL

EPA Region 5 Records Ctr.
247935

Mr. William Trumbull
Assistant Commissioner
City of Chicago
Department of Environment
30 North LaSalle, 25th Floor
Chicago, Illinois 60602

RE: Cuneo Press Property

Dear Mr. Trumbull:

Below is a summary of our comments on the work plan prepared by Roy F. Weston to address the radioactive contamination at the above-referenced location.

First, gamma spectrometric data from Teledyne Isotopes appears to have been referenced to a nuclear power plant library rather than an environmental library. This may tend to misidentify some radionuclides because the gamma energy is attributed to the wrong emitter. Data should be compared to an environmental library. I believe this can be done without rerunning the sample. If data indicates that certain radionuclides may be present, when in fact they are not, undue concern and confusion could result.

It is not known how isotopic concentrations for radium, uranium and thorium were obtained. Text dealing with the methods would be very useful.

Spectrometric concentrations for Pb-214 and Bi-214 are about equal. Normally, the results should be equal. Any inequality may be due to counting times which, if too short, could lead to differences.

Uranium isotopic concentrations appear to be in natural ratios. U-238 : U-234 are about equal in concentration. U-235 is about 5.7% of U-238. Naturally, it would be about 4.6%. Concentrations are about the level of background soils.

Thorium-230 is not in equilibrium with U-238 and U-234, indicating disruption of the decay series. This could be due to industrial processing.

Ra-226 is not in equilibrium with any of U-238, U-234 or Th-230, indicating disruption of the decay series. This could indicate industrial processing as well.

The Ra-226 concentrations of 41 picoCuries per gram (pCi/g) is substantially above the concentration expected for background soils. Background soils would be on the order of 1 pCi/g.

Th-232 and Th-228 are approximately equal. This would be expected in natural soils. Concentrations are reasonable for natural, background soils.

Overall, the contaminant appears to be Ra-226 at levels that USEPA Region 5 would normally consider actionable.

1. **TASK 4: Excavation, Transportation and Disposal**

When excavating, try to have the containers on-site to reduce airborne exposure, costs associated with double-handling and extra personnel exposure associated with double-handling. If not, have either tarps or a suppressant readily available. Given the volume of waste expected, there are a number of shipping options. We have discovered that the most cost-effective method is rail-shipment via intermodal containers.

2. **TASK 5: Confirmation Sampling**

Our current Regional criteria for radium clean-ups is a soil concentration less than 5 picoCuries per gram over background, measured in 15 centimeter layers, and averaged over 100 m^2. We generally verify with a composite taken with 5 samples, one at the center and 4 half way between the center and the corner. Our verification protocol is enclosed.

Lastly, we would suggest and offer to survey the property to ensure that the radioactive contamination is merely this 30' x 100' area. Also, later in the week, I will call you regarding disposal.

If you have any questions or want to discuss this matter further, please contact me at (312) 886-3601 or Larry Jensen, Regional Radiation Expert, at (312) 886-5026.

Sincerely,

Verneta Simon

Verneta Simon
On-Scene Coordinator

Enclosure

bcc: Jack Barnette, AE-17J (w/enclosure)
Larry Jensen, AE-17J (w/enclosure)
Frank Rollins, SE-5J (w/enclosure)
Don Bruce, SE-5J (w/enclosure)

VERIFICATION PROTOCOL

1. Grid the excavation into 100 square meter (m^2) units. Wherever possible, square units should be used. If this is not feasible (e.g., at the excavation perimeter or in excavations less than 100 m^2) then rectangular units can be used. An attempt should be made to construct reasonably square units. Units should be drawn to minimize the area outside the excavation. Excavations comprising less than 100 m^2 should have a grid positioned over the entire excavation with minimal overlap on unexcavated land. The grid area can be less than 100 m^2 so long as it covers the entire excavation.

2. From representative points in the local region of the site, establish the gamma background with a shielded scintillometer at ground level. This level will be used for all excavation verifications by all parties.

From the same points establish the local region radium-226 and radium-228 soils concentrations. These will be used as well for all excavation verifications by all parties.

3. Scan the entire excavation at ground level with the shielded scintillometer. Points above 3 times local gamma background will be indicative of remaining contamination. Excavation will continue until no spots above 3 times local gamma background remain.

4. Once the excavation has been excavated to below 3 times local gamma background, confirmation soil samples will be taken. Sample points for square units and rectangular units will be taken at the center and half way between the corner and the center, for a total of 5 samples. For other units (e.g., long thin units) the sampling points and the number of samples will be at the discretion of the On-Scene Coordinator. These samples will be composited and constitute the unit's average.

5. Verification of an acceptable cleanup will be established when all units have composite soil concentrations less than 5 pCi/g (radium-226 + radium-228) above the local (radium-226 + radium-228) background.